ANTELOPE VALLEY – EAST KERN WATER AGENCY

2023 ANNUAL WATER QUALITY REPORT

LOS ANGELES COUNTY SYSTEM

ANTELOPE VALLEY - EAST KERN WATER AGENCY
AVEK
ESTABLISHED 1959

A PUBLIC AGENCY

March 4, 2024

Dear General Manager:

This is the 2023 Annual Water Quality Report from the Antelope Valley-East Kern Water Agency (AVEK). Since the water you obtain from AVEK represents one of your sources of water, we have included a summary of results for all analyses completed in 2023 for your convenience. If you find that you need copies of individual monitoring reports please feel free to contact me and I will be happy to provide those for you.

The AVEK Rosamond Water Treatment Plant was operating the majority of 2023. While the treatment plant was offline, water from our Westside Water Bank well field was delivered to our Kern County customers.

In accordance with the Consumer Confidence Report (CCR) guidance manuals issued by the State Water Resources Control Board and the United States Environmental Protection Agency, we are herein providing you with the monitoring data and other information you will need to produce your CCR.

If you have any questions or need additional information, please call me at 661-943-3201. However, please do not designate AVEK or this office as your contact in your CCR. According to the State Board and EPA guidelines, the designated contact person should be someone from your system. While we are always happy to clarify questions about AVEK water, we do not have the specific information necessary to answer questions about your water, blending practices or distribution systems.

Respectfully,

Jordan Wray
Laboratory Director

6500 WEST AVENUE N • PALMDALE, CALIFORNIA 93551
(661) 943-3201 • www.avek.org • info@avek.org

The mission of AVEK is to deliver reliable, sustainable and high quality supplemental water to the region in a cost-effective and efficient manner.

Antelope Valley-East Kern Water Agency

2023 Annual Water Quality Report

We are pleased to provide you with this year's Annual Water Quality Report. We want to keep you informed about the excellent water we have delivered to you over the past year. Our goal is, and always has been, to provide to you a safe supply of drinking water.

Our main water source is the State Water Project, California Aqueduct. The State Water Resources Control Board (State Board) has assessed the vulnerability of the State Water Project as to possible contaminating activities. The assessment's description and discussion of vulnerability is as follows:

> "The California Aqueduct originates at the Sacramento-San Joaquin Delta at Clifton Court Forebay. Water in the Delta originates in the Sacramento River watershed, the San Joaquin watershed, and the watershed drainage from the Mokelumne River, Stanislaus River, Merced River and several smaller rivers that drain the eastern slopes of the Sierra Nevadas. Located in these drainage areas are a broad variety of potential sources of contamination including municipal, industrial and agricultural activities. Also influencing the quality of water pumped from the Delta is the impact of the estuarial nature of the Delta and the naturally occurring salt-water intrusion which is dependent to a large extent on the inflow from the contributing rivers.
>
> The possible contaminating activities present within the California Aqueduct watershed are described in the State Water Project Watershed Sanitary Survey conducted by the California Department of Water Resources and their consultants in 1990 and updated in 2021."

Our alternative water source is State Water Project water which has been stored in the aquifer at various underground storage facilities (i.e. "water banks") and is recovered for water quality purposes or supply purposes during times of drought. The vulnerability of the facilities was assessed in 2014 as follows:

> "The wells are most vulnerable to contaminants from activities such as herbicide use along transportation corridors or road right-of-ways; agricultural/irrigation wells; irrigated crops; application of fertilizer, pesticides, and herbicides; agricultural drainage; and the raw State Water Project surface water used to recharge the groundwater basins. Other potential contaminating activities include the potential presence of certain unknown activities such as unregistered underground storage tanks."

A copy of these assessments may be viewed at, Antelope Valley-East Kern Water Agency, 6450 West Avenue N, Palmdale, CA 93551.

If you have any questions about this report or the Antelope Valley-East Kern Water Agency, please contact Jordan Wray, Laboratory Director at 661-943-3201. We want our valued customers to be informed about our Water Agency. If you want to learn more, please attend any of our regularly scheduled Board meetings. They are held on the second and fourth Tuesday of every month, 5:30 PM, at the Antelope Valley-East Kern Water Agency Office, 6450 West Avenue N, Palmdale, CA, 93551.

Antelope Valley-East Kern Water Agency routinely monitors for contaminants in our drinking water according to Federal and State laws. The table in this report, "2023 Annual Water Quality Report", shows the results of our monitoring for the period of January 1st to December 31st, 2023.

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk**.** More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

We have learned through our monitoring and testing that some contaminants have been detected, however, we are proud to report that our drinking water meets all State and Federal requirements.

Total Coliform: Water systems are required to meet a strict standard for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If the standard is exceeded, the water supplier must notify the public by newspaper, television or radio.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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The Antelope Valley-East Kern Water Agency provides treated surface water as a source of drinking water.
Treatment technique: Conventional
EPA Turbidity Performance Standards: Turbidity of the filtered water must:

1. Be less than or equal to 0.30 NTU in 95% of measurements in a month.
2. Not exceed 1 NTU at any time.

Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1: **100%**
Highest single turbidity measurement during the year: **0.19**
Percentage of samples < 0.30 NTU: **100%**
The number of violations of any surface water treatment requirements: **NONE**
Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

The Antelope Valley-East Kern Water Agency also provides groundwater as a source of drinking water.
Treatment technique: Chlorination

EPA Groundwater Rule: AVEK meets the requirements of the Groundwater Rule by providing a minimum of 4-log reduction of viruses by continously providing a minimum free chlorine residual of 0.5 mg/L leaving the clearwell.
Lowest single free chlorine residual measurement during the year: **0.78**
Number of violations of the Groundwater Rule: **NONE**

MICROBIOLOGICAL CONTAMINANTS

Type of Sample(s)	Parameter	Sampling Frequency	MCL	No. of Months in Violation	System Results Range	System Results Average
Distribution	Total Coliform Bacteria	152-193 / mo	5% positive	None	0%-0.5%	0%
Distribution	Fecal Coliform/*E. coli*	152-193 / mo	1 pos. with 2 TC pos.	None	0%	0%

INORGANIC CONTAMINANTS

RESULTS

Parameter	Units	MCL	DLR	PHG or (MCLG)	Acton Plant Effluent (CWR) Range	Acton Plant Effluent (CWR) Average	Eastside Plant Effluent (CWR) Range	Eastside Plant Effluent (CWR) Average	Quartz Hill Plant Effluent (CWR) Range	Quartz Hill Plant Effluent (CWR) Average	Raw Influent (State Water Project) Range	Raw Influent (State Water Project) Average	Water Bank Effluent (CWR) Range	Water Bank Effluent (CWR) Average	Water Bank Wells Range	Water Bank Wells Average
Aluminum	µg/L	1000	50	600		ND	ND	ND	ND	ND		100			ND	ND
Antimony	µg/L	6	6	1		ND		ND		ND		ND			ND	ND
Arsenic	µg/L	10	2	0.004		ND		ND		ND	1.5-6.5	3.1	3.7-7.6	5.7	2.4-17	4.6
Barium	µg/L	1000	100	2000		ND		ND		ND		ND			ND	ND
Beryllium	µg/L	4	1	1		ND		ND		ND		ND			ND	ND
Cadmium	µg/L	5	1	0.04		ND		ND		ND		ND			ND	ND
Chromium (Total)	µg/L	50	10			ND		ND		ND		ND			ND	ND
Chromium (Hexavalent)	µg/L	*	1	0.02		ND		ND		ND		ND			ND	ND
Cyanide	µg/L	150	100	150		ND		ND		ND		ND			ND	ND
Fluoride	mg/L	2	0.1	1		0.22		ND		ND		ND			ND-0.34	0.18
Mercury	µg/L	2	1	1.2		ND		ND		ND		ND			ND	ND
Nickel	µg/L	100	10	12		ND		ND		ND		ND			ND	ND
Nitrate (as N)	mg/L	10	0.4	10		ND		0.83		0.84		0.88			0.5-5.1	2.7
Nitrite (as N)	mg/L	1	0.4	1		ND		ND		ND		ND			ND	ND
Nitrate+Nitrite (as N)	mg/L	10		10		ND		0.83		0.84		0.88			0.5-5.1	2.7
Perchlorate	µg/L	6	1	1		ND		ND		ND		ND			ND	ND
Selenium	µg/L	50	5	30		ND		ND		ND		ND			ND	ND
Thallium	µg/L	2	1	0.1		ND		ND		ND		ND			ND	ND

*There is currently no MCL for hexavalent chromium. The previous MCL of 0.010 mg/L was withdrawn on September 11, 2017.

GENERAL PHYSICAL AND SECONDARY STANDARDS

RESULTS

Parameter	Units	MCL	DLR	Acton Plant Effluent (CWR) Range	Acton Plant Effluent (CWR) Average	Eastside Plant Effluent (CWR) Range	Eastside Plant Effluent (CWR) Average	Quartz Hill Plant Effluent (CWR) Range	Quartz Hill Plant Effluent (CWR) Average	Raw Influent (State Water Project) Range	Raw Influent (State Water Project) Average	Water Bank Wells Range	Water Bank Wells Average
Aluminum	µg/L	1000	50		ND	ND	ND	ND	ND		100	ND	ND
Calcium	mg/L	no standard			24		22		22		22	11-190	72
Chloride	mg/L	250			73		71		71		67	32-97	58

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Parameter	Units	MCL	DLR	Acton Plant Effluent (CWR) Range	Acton Plant Effluent (CWR) Average	Eastside Plant Effluent (CWR) Range	Eastside Plant Effluent (CWR) Average	Quartz Hill Plant Effluent (CWR) Range	Quartz Hill Plant Effluent (CWR) Average	Raw Influent (State Water Project) Range	Raw Influent (State Water Project) Average	Water Bank Wells Range	Water Bank Wells Average
Color	Units	15		<5	<5	<5	<5	<5	<5		15	<5	<5
Copper	µg/L	1000	50		ND		ND		ND		ND		ND
Foaming Agents (MBAS)	mg/L	0.5			ND		ND		ND		ND		ND
Hardness (Total) as CaCO3	mg/L	no standard			90		100		100		100	29-250	150
Iron	µg/L	300	100		ND		ND		ND		ND		ND
Magnesium	mg/L	no standard			7.4		12		12		12	0.38-13	6.7
Manganese	µg/L	50	20		ND		ND		ND		ND		ND
Odor @ 60 C	Units	3	1	<1	<1	<1	<1	<1	<1		<1	<1	<1
pH	Units	no standard		6.9-7.6	7.3	6.5-7.3	6.9	6.5-7.2	6.9	7.6-9.2	8.0	7.4-8.6	7.9
Silver	µg/L	100	10		ND		ND		ND		ND		ND
Sodium	mg/L	no standard			42		47		47		45	8.8-58	38
Specific Conductance	µmhos	1600		420	420	460-470	460	470	470	450	450	390-760	550
Sulfate	mg/L	250	0.5		22		59		58		41	41-63	53
Thiobencarb (Bolero)	µg/L	1	1		ND		ND		ND		ND		ND
Methyl tert-Butyl Ether (MTBE)	µg/L	5	3		ND		ND		ND		ND		ND
Total Dissolved Solids	mg/L	500			200		240		250		250	240-460	330
Turbidity	Units	5		0.02-0.13	0.08	0.02-0.09	0.05	0.03-0.19	0.06	0.17-52	10	0.05-0.30	0.15
Zinc	µg/L	5000	50		330		480		580		ND		ND
Total Alkalinity (as CaCO3)	mg/L	no standard			67		54		55	32-78	57	98-170	120
Bicarbonate Alkalinity(as HCO3)	mg/L	no standard			67		54		55		70	98-170	120
Carbonate (as CO3)	mg/L	no standard			ND		ND		ND		ND	ND-3.3	0.7
Hydroxide (as OH)	mg/L	no standard			ND		ND		ND		ND	ND	ND

RADIOLOGICAL CONTAMINANTS

Parameter	Units	MCL	DLR	PHG	RESULTS Raw Influent (State Water Project) Range	RESULTS Raw Influent (State Water Project) Average	RESULTS Water Bank Wells Range	RESULTS Water Bank Wells Average
Gross Alpha	pCi/L	15	3		ND	ND		
Gross Beta	pCi/L	50	4		ND	ND		
Strontium 90	pCi/L	8	2	0.35		ND		
Tritium	pCi/L	20,000	1,000	400		ND		
Uranium	pCi/L	20	1	0.43		ND	1.2-1.9	1.5
Radium 228	pCi/L		1	0.019	ND	ND		
Radium 226	pCi/L		1	0.05		ND		

VOLATILE ORGANIC CONTAMINANTS

Parameter	Units	MCL	DLR	PHG	RESULTS State Water Project Average	RESULTS Water Bank Wells Range	RESULTS Water Bank Wells Average
1,1,1-Trichlorethane (1,1,1-TCA)	µg/L	200	0.5	1000	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	0.1	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	5	0.5	0.3	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	µg/L	5	0.5	3	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	µg/L	6	0.5	10	ND	ND	ND
1,2,4-Trichlorobenzene	µg/L	5	0.5	5	ND	ND	ND
1,2-Dichlorobenzene (o-DCB)	µg/L	600	0.5	600	ND	ND	ND
1,2-Dichloroethane (1,2-DCA)	µg/L	0.5	0.5	0.4	ND	ND	ND
1,2-Dichloropropane	µg/L	5	0.5	0.5	ND	ND	ND
1,3-Dichloropropene (Total)	µg/L	0.5	0.5	0.2	ND	ND	ND
1,4-Dichlorobenzene (p-DCB)	µg/L	5	0.5	6	ND	ND	ND
Benzene	µg/L	1	0.5	0.15	ND	ND	ND
Carbon tetrachloride	µg/L	0.5	0.5	0.1	ND	ND	ND
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	6	0.5	100	ND	ND	ND
cis-1,3-Dichloropropene	µg/L				ND	ND	ND
Dichloromethane (Methylene Chloride)	µg/L	5	0.5	4	ND	ND	ND
Ethylbenzene	µg/L	300	0.5	300	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	µg/L	13	3	13	ND	ND	ND
Monochlorobenzene (Chlorobenzene)	µg/L	70	0.5	70	ND	ND	ND
Styrene	µg/L	100	0.5	0.5	ND	ND	ND

Parameter	Units	MCL	DLR	PHG	State Water Project Average	Water Bank Wells Range	Water Bank Wells Average
Tetrachloroethylene (PCE)	µg/L	5	0.5	0.06	ND	ND	ND
Toluene	µg/L	150	0.5	150	ND	ND	ND
trans-1,2-Dichloroethylene (t-1,2-DCE)	µg/L	10	0.5	60	ND	ND	ND
trans-1,3-Dichloropropene	µg/L				ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	0.5	1.7	ND	ND	ND
Trichlorofluromethane (Freon11)	µg/L	150	5	1300	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	µg/L	1200	10	4000	ND	ND	ND
Vinyl Chloride (VC)	µg/L	0.5	0.5	0.05	ND	ND	ND
Xylenes (Total)	µg/L	1750	0.5	1800	ND	ND	ND

SYNTHETIC ORGANIC CHEMICALS

RESULTS

Parameter	Units	MCL	DLR (DL)	PHG	State Water Project Range	State Water Project Average	Water Bank Wells Range	Water Bank Wells Average
Alachlor	µg/L	2	1	4	ND	ND	ND	ND
Atrazine	µg/L	1	0.5	0.15	ND	ND	ND	ND
Bentazon	µg/L	18	2	200	ND	ND	ND	ND
Benzo(a)pyrene	µg/L	0.2	0.1	0.007	ND	ND	ND	ND
Carbofuran	µg/L	18	5	0.7	ND	ND	ND	ND
Chlordane	µg/L	0.1	0.1	0.03	ND	ND	ND	ND
2,4-D	µg/L	70	10	20	ND	ND	ND	ND
Dalapon	µg/L	200	10	790	ND	ND	ND	ND
Dibromochloropropane (DBCP)	µg/L	0.2	0.01	0.0017	ND	ND	ND	ND
Di(2-ethylhexyl)adipate	µg/L	400	5	200	ND	ND	ND	ND
Di(2-ethylhexyl)phthalate	µg/L	4	3	12	ND	ND	ND	ND
Dinoseb	µg/L	7	2	14	ND	ND	ND	ND
Diquat	µg/L	20	4	6	ND	ND	ND	ND
Endothall	µg/L	100	45	94	ND	ND	ND	ND
Endrin	µg/L	2	0.1	0.3	ND	ND	ND	ND
Ethylene Dibromide (EDB)	µg/L	0.05	0.02	0.01	ND	ND	ND	ND
Glyphosate	µg/L	700	25	900	ND	ND	ND	ND
Heptachlor	µg/L	0.01	0.01	0.008	ND	ND	ND	ND
Heptachlor Epoxide	µg/L	0.01	0.01	0.006	ND	ND	ND	ND
Hexachlorobenzene	µg/L	1	0.5	0.03	ND	ND	ND	ND
Hexachlorocyclopentadiene	µg/L	50	1	2	ND	ND	ND	ND
Lindane	µg/L	0.2	0.2	0.032	ND	ND	ND	ND
Methoxychlor	µg/L	30	10	0.09	ND	ND	ND	ND
Molinate	µg/L	20	2	1	ND	ND	ND	ND
Oxamyl	µg/L	50	20	26	ND	ND	ND	ND
Pentachlorophenol	µg/L	1	0.2	0.3	ND	ND	ND	ND
Picloram	µg/L	500	1	166	ND	ND	ND	ND
Polychlorinated Biphenyls	µg/L	0.5	0.5	0.09	ND	ND	ND	ND
Simazine	µg/L	4	1	4	ND	ND	ND	ND
Thiobencarb (Bolero)	µg/L	70	1	42	ND	ND	ND	ND
Toxaphene	µg/L	3	1	0.03	ND	ND	ND	ND
2,3,7,8-TCDD (Dioxin)	pg/L	30	5	0.05	ND	ND	ND	ND
2,4,5-TP (Silvex)	µg/L	50	1	3	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/L	0.005	0.005	0.0007	ND	ND	ND	ND

DISINFECTION RESIDUAL, PRECURSORS, and BYPRODUCTS

Type of Sample(s)	Parameter	Units	MCL/MRDL	DLR	MRDLG	RESULTS Range	RESULTS Average
Distribution	Chlorine (as total Cl2)	mg/L	4.0		4	0.21 - 1.90	1.12
Treated Water	Total Organic Carbon (TOC)	mg/L	Treatment Requirement	0.3		0.8 - 2.9	2.0
State Water Project	Total Organic Carbon (TOC)	mg/L	Treatment Requirement	0.3		1.1 - 4.6	3.1
Distribution	Stage 2 D/DBP Rule Total Trihalomethanes	µg/L	80**	0.5		9.5 - 56	46 #
Distribution	Stage 2 D/DBP Rule Total Haloacetic Acids	µg/L	60**	0.5		ND - 24	14 #
Treated Water	Bromate	µg/L	10^{+}	1.0		ND - 3.6	0.3

** Stage 2 D/DBP Rule Total THMs and Total HAAs compliance is based upon Locational Running Annual Averages.

Location with the highest TTHM average

$^{+}$ Compliance is based on the running annual average computed quarterly, of monthly samples, collected at the entrance to the distribution system.

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DEFINITIONS and FOOTNOTES:

Plant Effluent, CWR, is finished, treated drinking water.
Raw Water is the Source Water, the California Aqueduct or wells, prior to treatment.
Units: mg/L = milligrams per liter, parts per million (ppm)
µg/L = micrograms per liter, parts per billion (ppb)
pg/L = picograms per liter, parts per quadrillion (ppq)
µmhos = micromhos, a measure of specific conductance
pCi/L = pico Curies per liter
< = less than
> = greater than
ND = none detected above the DLR
NTU = nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set by the US Environmental Protection Agency or the State Water Resources Control Board as close to the PHGs and MCLGs as is economically or technologically feasible.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment that may not exceeded at the consumer's tap.
DLR: Detection Limit for purposes of Reporting.
(DL): Detection limit determined by the Laboratory when no DLR has been established.
MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
MRDLG: Maximum Residual Disinfectant Level Goal. The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the US Environmental Protection Agency.
PHG: Public Health Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Office of Environmental Health Hazard Assessment.
Primary Drinking Water Standard: Primary MCLs, specific treatment techniques adopted in lieu of primary MCLs, and monitoring and reporting requirements for MCLs that are specified in regulations.
Secondary Standards: Aesthetic standards established by the State Water Resources Control Board.
All analyses performed by ELAP certified laboratories: AVEK Water Agency, Eurofins Eaton Analytical Laboratories, or Eurofins subcontract lab.